What Is Claimed Is:

1. A method of synchronizing control of one or more devices in a system during an operational cycle, comprising:

retrieving data associated with a plurality of predetermined event commands to be performed by one or more of the devices in the operational cycle;

associating a current event command in turn with the predetermined event commands; and

responsive to the current event command being associated with a particular event command selected from the predetermined event commands, enabling one or more of the devices to perform the particular event command by transmitting a schedule command followed by a valid command to the devices, the valid command causing one or more of the devices intended to perform the particular event command, and the schedule command indicating a predetermined time for the particular event command to be performed.

2. The method according to Claim 1, further comprising:

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2   initializing the operational cycle prior to retrieving data associated with a

3   plurality of predetermined event commands.

1   3. The method according to Claim 1, further comprising:

2   selecting the current event command to be associated with a first of the

3   predetermined event commands after retrieving data associated

4   with a plurality of predetermined event commands.

1   4. The method according to Claim 1, wherein retrieving data associated with a

2   plurality of predetermined event commands to be performed by one or more of the

3   devices in the operational cycle comprises:

4   reading the data from a memory; and

5   loading the data into the system.

1   5. The method according to Claim 1, wherein retrieving data associated with a

2   plurality of predetermined event commands to be performed by one or more of the

3   devices in the operational cycle comprises:

4   accessing a device external to the system; and

5   loading the data into the system from the device.

1   6. The method according to Claim 1, wherein retrieving data associated with a

2   plurality of predetermined event commands to be performed by one or more of the

3   devices in the operational cycle comprises:

4   retrieving a plurality of predetermined time-stamps each associated with

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5   corresponding ones of the predetermined event commands; and

6   storing the time-stamps and the predetermined event commands in a

7   memory.

1   7. The method according to Claim 1, wherein retrieving data associated with a

2 plurality of predetermined event commands to be performed by one or more of the

3 devices in the operational cycle comprises:

4   loading a list of the predetermined event commands each being associated

5   with a time-tag in increasing order.

1   8. The method according to Claim 1, wherein retrieving data associated with a

2 plurality of predetermined event commands to be performed by one or more of the

3 devices in the operational cycle comprises:

4   loading a sequential list of the predetermined event commands each being

5   associated with a time-tag.

1   9. The method according to Claim 1, wherein associating a current event

2 command in turn with the predetermined events comprises:

3   determining whether the current event command matches in turn all of the

4   predetermined event commands.

1   10. The method according to Claim 1, wherein associating a current event

2 command in turn with the predetermined event commands comprises:

3   determining whether the current event command matches in turn selected

4   ones of the predetermined event commands.

1   11. The method according to Claim 1, wherein associating a current event

2   command in turn with the predetermined event commands comprises:

3   determining predetermined time-stamps from the data, each of the time-

4   stamps being in increasing order and associated with a

5   corresponding one of the predetermined event commands.

1   12. The method according to Claim 11, further comprising:

2   measuring a clock time associated with the system;

3   causing the current event command to represent the clock time; and

4   matching the clock time with one of the predetermined time-stamps.

1   13. The method according to Claim 11, wherein associating a current event

2   command in turn with the predetermined event commands comprises:

3   recursively associating the current event command with each one of the

4   predetermined event commands in sequence according to the

5   increasing order of the time-stamps.

1   14. The method according to Claim 1, wherein enabling one or more of the

2   devices to perform the particular event command comprises:

3   responsive to the current event command being associated with the

4   particular event command, transmitting at least one command to

5   the devices.

1   15. The method according to Claim 14, wherein a first command includes the

2   particular event command and an identifier indicating one or more of the devices

3   intended to perform the particular event command.

1   16. The method according to Claim 15, wherein a second command includes a

2   validation signal authorizing activation of the particular event command by one or more

3   of the devices intended.

1   17. A method of controlling an operation to be performed at a predetermined

2   time, comprising:

3   receiving a first command transmitted from a host device;

4   interpreting the first command to synchronize performance of the

5   operation as intended;

6   receiving a second command transmitted from the host device;

7   interpreting the second command to determine that the operation may be

8   activated; and

9   responsive to a determination that the operation may be activated,

10   enabling activation of the operation at the predetermined time,

11   wherein the first command includes an identifier indicating at least one

12   device communicatively coupled to the host device and intended to

13   perform the operation at the predetermined time, and

14   wherein the second command comprises a validation signal indicating that

15   the operation may be activated as intended.

18. The method according to Claim 17, wherein receiving a first command

transmitted from a host device comprises:

awaiting the first command to be received from the host device; and

determining whether the first command has been received.

19. The method according to Claim 17, wherein the first command includes data.

20. The method according to Claim 19, wherein interpreting the first command to

synchronize performance of the operation as intended comprises:

responsive to the first command being received, extracting a parameter

from the data;

determining whether the parameter matches a predetermined identifier;

and

responsive to the parameter matching the predetermined identifier,

enabling synchronization of the activation of the operation with the

predetermined time.

21. The method according to Claim 20, wherein the parameter comprises a

module identifier and the predetermined identifier comprises a device identification

parameter.

22. The method according to Claim 19, wherein interpreting the first command to

synchronize performance of the operation as intended comprises:

extracting the operation, the predetermined time, and an event enable

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indicator from the data.

23. The method according to Claim 22, wherein extracting the predetermined time comprises:

determining a time-stamp associated with the predetermined time.

24. The method according to Claim 23, wherein enabling activation of the operation at the predetermined time comprises:

continuously incrementing a current clock count; and

enabling activation of the operation when the time-stamp matches the current clock count.

25. The method according to Claim 17, wherein receiving a second command transmitted from the host device comprises:

awaiting the second command to be received from the host device; and

determining whether the second command has been received.

26. The method according to Claim 17, wherein the first command is a schedule command comprising the operation and an identifier indicating one or more devices intended to perform the operation.

27. The method according to Claim 17, wherein receiving a first command transmitted from a host device comprises:

accepting the first command comprising the operation having been selected from a list of the predetermined operations each being

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5   associated with a time-tag in increasing order.

1   28.   The method according to Claim 17, wherein receiving a first command

2   transmitted from a host device comprises:

3   accepting the first command comprising the operation having been

4   selected in sequential order from a list of predetermined operations

5   each being associated with a time-tag in increasing order.

1   29.   The method according to Claim 17, wherein receiving a first command

2   transmitted from a host device comprises:

3   accepting the first command comprising the operation having been

4   selected in a predetermined order from a list of predetermined

5   operations each being associated with a time-tag in increasing

6   order.

1   30.   A computer-implemented method of activating a set of predetermined events

2   to be performed in an operational cycle at corresponding predetermined times,

3   comprising:

4   initializing the operational cycle;

5   loading data into a memory by accessing a device disposed externally

6   relative to the memory, the data comprising a to-do list of the

7   predetermined events and corresponding time-tags in increasing

8   order;

9   initializing an indicator representing a current event by associating the

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10   current event with a first event of the list of predetermined events

11   after loading data into a memory; and

12   enabling activation of the predetermined events by recursively

13   determining whether the current event matches one of the time-

14   tags,

15   responsive to the current event matching one of the time-tags,

16   transmitting a first command including a particular event

17   and a corresponding one of the time-tags matched with the

18   current event, the first command further including a

19   parameter specifying an intended device to perform the

20   particular event,

21   transmitting a second command to cause activation of the

22   particular event, and

23   adjusting the indicator to represent a current event next in

24   sequence.

1   31. The computer-implemented method according to Claim 30, wherein

2 determining whether the current event matches one of the time-tags comprises:

3   measuring a clock time;

4   associating the clock time with the current event; and

5   matching the clock time with one of the time-tags.

1   32. The computer-implemented method according to Claim 30, wherein

2 transmitting a first command comprises:

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3   broadcasting a schedule command to a plurality of devices, the plurality of

4   devices including the intended device.

1   33. The computer-implemented method according to Claim 32, wherein

2 transmitting a second command to cause activation of the particular event, comprises:

3   broadcasting a valid command to the plurality of devices to enable the

4   intended device to activate the particular event at a predetermined

5   time.

1   34. A computer-implemented method of enabling activation of at least one event

2 to be performed at a predetermined time as controlled by a host device, comprising:

3   listening for a first command received from the host device by

4   awaiting the first command to be received from the host device,

5   and

6   determining whether the first command has been received;

7   interpreting the first command for data included therein;

8   extracting a parameter from the data;

9   determining whether the parameter matches a predetermined identifier;

10   responsive to the parameter matching the predetermined identifier,

11   listening for a second command received from the host device, the

12   second command validating the activation of the event; and

13   responsive to the second command being received, causing the activation

14   of the event at the predetermined time,

15   wherein the parameter comprises a module identifier and the

16   predetermined identifier comprises a device identification

17   parameter associated with a destination device..

1   35. The computer-implemented method according to Claim 34, wherein

2   determining whether the first command has been received comprises:

3   accepting the first command comprising the event selected from a list of

4   the predetermined events each being associated with a time-tag in

5   increasing order.

1   36. The computer-implemented method according to Claim 34, further

2   comprising:

3   synchronizing the activation of the event with the predetermined time in

4   response to the parameter matching the predetermined identifier

5   and prior to listening for a second command.

1   37. The computer-implemented method according to Claim 34, further

2   comprising:

3   responsive to interpreting the first command, extracting the event, the

4   predetermined time, and an event enable indicator from the data,

5   wherein extracting the predetermined time comprises determining a time-

6   stamp associated with the predetermined time.

1   38. The computer-implemented method according to Claim 34, wherein the first

2   command comprises a schedule command, and the second command comprises a valid

3   signal indicating that the event may be activated as intended.

1   40. A computer-implemented method to synchronize operation of one or more

2   devices at associated predetermined times, said method comprising:

3   retrieving data associated with a plurality of predetermined events to be

4   performed by one or more of the devices;

5   associating a current event in turn with the predetermined events;

6   responsive to the current event being associated with a particular event of

7   the predetermined events,

8   transmitting a first command to the devices;

9   each of the devices receiving the first command transmitted;

10   each of the devices interpreting the first command to determine

11   one or more intended devices where the particular event

12   can be performed;

13   transmitting a second command to the devices;

14   each of the devices receiving the second command transmitted;

15   and

16   responsive to the second command received, the intended devices

17   enabling activation of the particular event at the

18   predetermined time.

1   41. The computer-implemented method according to Claim 40, wherein each of

2   the devices receiving the first command transmitted comprises:

3   awaiting the first command to be received from the host device; and

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4   determining whether the first command has been received.

1   42.   The computer-implemented method according to Claim 41, wherein

2   determining whether the first command has been received comprises:

3   accepting the first command comprising the particular event selected from

4   a list of the predetermined events each being associated with a

5   time-tag in increasing order.

1   43.   The computer-implemented method according to Claim 41, wherein

2   determining whether the first command has been received comprises:

3   accepting the first command comprising the particular event selected in

4   sequential order from a list of the predetermined events each being

5   associated with a time-tag in increasing order.

1   44.   The computer-implemented method according to Claim 41, wherein

2   determining whether the first command has been received comprises:

3   accepting the first command comprising the particular event selected in a

4   predetermined order from a list of the predetermined events each

5   being associated with a time-tag in increasing order.

1   45.   The computer-implemented method according to Claim 40, wherein each of

2   the devices interpreting the first command to determine one or more intended devices

3   where the particular event can be performed comprises:

4   extracting a parameter from the first command, the parameter representing

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5   a module identifier; and

6   matching the module identifier with a predetermined identifier

7   representing a device identification parameter associated with

8   corresponding one of the devices.

1   46. The computer-implemented method according to Claim 45, further

2   comprising:

3   extracting the particular event, the predetermined time, and an event

4   enable indicator from the first command.

1   47. The computer-implemented method according to Claim 46, wherein

2   extracting the predetermined time comprises:

3   determining a time-stamp associated with the predetermined time.

1   48. The computer-implemented method according to Claim 47, wherein enabling

2   activation of the particular event at the predetermined time comprises:

3   continuously incrementing a current clock count; and

4   causing activation of the event when the time-stamp matches the current

5   clock count.

1   49. The computer-implemented method according to Claim 40, wherein each of

2   the devices receiving the second command transmitted comprises:

3   awaiting the second command to be received from the host device; and

4   determining whether the second command has been received.

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50. The computer-implemented method according to Claim 40, wherein the first command comprises a schedule command.

51. The computer-implemented method according to Claim 40, wherein the second command comprises a valid signal indicating that the event may be activated as intended.

52. A computer-implemented method of enabling activation of at least one event to be performed at a predetermined time as controlled by a host device, the method comprising:

a step for receiving a first command from the host device;

a step for interpreting the first command including data to extract a parameter from the data;

a step for determining whether the parameter matches a predetermined identifier;

responsive to the parameter matching the predetermined identifier, a step for receiving a second command from the host device, the second command validating the activation of the event; and

responsive to the second command being received, a step for causing the activation of the event at the predetermined time.

53. A method of controlling at least one operation to be performed at a predetermined time, the method comprising:

3   a step for receiving a first command transmitted from a host device;

4   a step for interpreting the first command to synchronize performance of

5   the operation as intended;

6   a step for receiving a second command transmitted from the host device;

7   a step for interpreting the second command to determine that the operation

8   may be activated; and

9   responsive to a determination that the operation may be activated, a step

10   for causing activation of the event at the predetermined time.

1   54. A video processing system, comprising:

2   a processor coupled to a controller, said controller communicatively

3   coupled to a first bus;

4   a host device transmitting signals to the first bus, the host device

5   comprising a plurality of inputs communicatively coupled to the

6   controller, a first output transmitting schedule commands to the

7   devices, and a second output transmitting a validation command to

8   the devices; and

9   one or more devices coupled to receive the signals from the first bus.

1   55. The video processing system according to Claim 54, further comprising:

2   a front-end subsystem coupled to the first bus; and

3   coupled to the first bus, a back-end subsystem.

1   56. The video processing system according to Claim 55, wherein the front-end

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2　subsystem includes the processor and the host device.

1　　　　57. The video processing system according to Claim 56, wherein the front-end

2　and back-end subsystems includes the plurality of devices.

1　　　　58. The video processing system according to Claim 54, wherein the host device

2　includes:

3　　　　　　　an interface receiving commands from the controller; and

4　　　　　　communicatively coupled to the interface, a schedule storage element

5　　　　　　　　　including a plurality of predetermined events to be performed by

6　　　　　　　　　one or more of the devices in an operational cycle, and

7　　　　　　　　　corresponding time-tags in increasing order.

1　　　　59. The video processing system according to Claim 58, further comprising:

2　　　　　　coupled to the interface, a schedule data element enabling communication

3　　　　　　　　of events from the schedule storage element along the first bus;

4　　　　　　　　and

5　　　　　　coupled to the interface, a schedule access element enabling the controller

6　　　　　　　　access to the schedule storage element.

1　　　　60. The video processing system according to Claim 58, further comprising:

2　　　　　　a current event indicator specifying one of the events stored in the

3　　　　　　　　schedule storage element.

1　　　　61. The video processing system according to Claim 58, wherein each of the

2   predetermined events is 8 bits, and each of the time-tags is 12 bits.

1   62. The video processing system according to Claim 61, wherein each of the

2   predetermined events includes a module identifier, the module identifier comprising four

3   of the 8 bits of each predetermined event.

1   63. The video processing system according to Claim 54, wherein said system is

2   included in one of a PC camera, digital camera, personal digital assistant (PDA),

3   multimedia cellular mobile phone, digital video recorder (DVR), and multimedia device

4   and appliance.

1   64. The video processing system according to Claim 54, wherein said system is

2   included in one of an SoC and an ASIC applications.

1   65. A video processing system enabling activation of at least one event to be

2   performed at a predetermined time as controlled by a host device, comprising:

3   processor means coupled control means communicatively coupled to a

4   first bus;

5   host means transmitting signals to the first bus; and

6   one or more client means coupled to receive the signals from the first bus.

1   66. The video processing system according to Claim 65, wherein the host means

2   comprises:

3   interface means receiving commands from the control means; and

4   communicatively coupled to the interface means, a scheduler means

storing a plurality of predetermined events to be performed by one

or more of the client means in an operational cycle, and

corresponding time-tags in increasing order.

67. The video processing system according to Claim 66, further comprising:

coupled to the interface means, schedule data means enabling

communication of events from the scheduler means along the first

bus; and

coupled to the interface means, schedule access means enabling the

control means access to the scheduler means.

68. A computer program product for synchronizing control of one or more

devices in a system during an operational cycle, the computer program product stored on

a computer readable medium, and adapted to perform operations of:

retrieving data associated with a plurality of predetermined event

commands to be performed by one or more of the devices in the

operational cycle;

associating a current event in turn with the predetermined event

commands; and

responsive to the current event being associated with a particular event

command of the predetermined event commands, enabling one or

more of the devices to perform the particular event command.

69. A computer program product for controlling at least one operation to be

performed at a predetermined time, the computer program product stored on a computer

3   readable medium, and adapted to perform operations of:

4   receiving a first command transmitted from a host device;

5   interpreting the first command to synchronize performance of the

6   operation as intended;

7   receiving a second command transmitted from the host device;

8   interpreting the second command to determine that the operation may be

9   activated; and

10   responsive to a determination that the operation may be activated,

11   enabling activation of the event at the predetermined time.

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